CLAIMS

1. An apparatus for enabling recovery of missing information in a digital communication system, comprising:

a Forward Erasure Correction (FXC) encoder for computing FXC parity superpackets across information superpackets for subsequent recovery of any entire ones of the information superpackets that have been at least partially compromised due to synchronization loss.

2. The apparatus of claim 1, wherein the FXC encoder computes the FXC parity superpackets across the information superpackets at one byte per each of the information superpackets.

3. The apparatus of claim 1, wherein for k information superpackets, each of length s, said FXC encoder computes h FXC parity superpackets of the length s, where $h = n - k$, n = a block length of each of the FXC parity superpackets, and k = a number of information symbols in each of the FXC parity superpackets.

4. The apparatus of claim 1, further comprising a multiplexer for multiplexing the information superpackets and the FXC parity superpackets prior to any transmission thereof.

5. The apparatus of claim 1, wherein the multiplexer assigns different Process IDentifiers (PIDs) to the FXC parity superpackets than the information superpackets.

6. The apparatus of claim 1, wherein the FXC encoder computes the FXC parity superpackets using Reed Solomon (RS) codes.

7. The apparatus of claim 1, further comprising a multiplexer for generating FXC sync transport packets that indicate a correspondence between superpacket sequence number start positions.

8. The apparatus of claim 1, wherein the FXC parity superpackets are computed over time periods corresponding to an expected length of at least one synchronization loss period.

9. An apparatus for recovering missing information in a digital communication system, comprising:

a Forward Erasure Correction (FXC) decoder for decoding FXC parity superpackets previously computed across information superpackets to recover any entire ones of the information superpackets that have been at least partially compromised due to synchronization loss.

10. The apparatus of claim 9, wherein said FXC decoder further decodes FXC sync transport packets to determine superpacket sequence numbers and

superpacket positions for both the FXC parity superpackets and the information superpackets.

11. The apparatus of claim 9, wherein said FXC decoder is adapted to receive an error signal that indicates an erasure position corresponding to the information superpackets that have been at least partially compromised due to the synchronization loss.

12. A method for enabling recovery of missing information in a digital communication system, comprising:

computing FXC parity superpackets across information superpackets for subsequent recovery of any entire ones of the information superpackets that have been at least partially compromised due to synchronization loss.

13. The method of claim 12, wherein said computing step comprises the step of computing the FXC parity superpackets across the information superpackets at one byte per each of the information superpackets.

14. The method of claim 12, wherein for k information superpackets, each of length s, said computing step comprises the step of computing h FXC parity superpackets of the length s, where $h = n - k$, n = a block length of each of the FXC parity superpackets, and k = a number of information symbols in each of the FXC parity superpackets.

15. The method of claim 12, further comprising the step of multiplexing the information superpackets and the FXC parity superpackets prior to any transmission thereof.

16. The method of claim 12, wherein said multiplexing step comprises the step of assigning different Process IDentifiers (PIDs) to the FXC parity superpackets than the information superpackets.

17. The method of claim 12, wherein said computing step computes the FXC parity superpackets using Reed Solomon (RS) codes.

18. The method of claim 12, further comprising the step of generating FXC sync transport packets that indicate a correspondence between superpacket sequence number start positions.

19. The method of claim 12, wherein said computing step computes the FXC parity superpackets over time periods corresponding to an expected length of at least one synchronization loss period.

20. A method for recovering missing information in a digital communication system, comprising:

decoding FXC parity superpackets previously computed across information superpackets to recover any entire ones of the information superpackets that have been at least partially compromised due to synchronization loss.

21. The method of claim 20, further comprising the step of decoding FXC sync transport packets to determine superpacket sequence numbers and superpacket positions for both the FXC parity superpackets and the information superpackets.